TRADOC PAMPHLET 525-77

BATTLEFIELD DISTRIBUTION

2 FEBRUARY 1998

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FOREWORD

U.S. National and military strategy is changing dramatically in response to massive global political and economic turbulence. This fundamental change calls for the U.S. to have flexible forces that can deploy rapidly. Further, the change in the international political situation and shift toward domestic priorities mean that the defense establishment will have to manage its assets more efficiently and effectively. This combination of factors requires the Army to improve in-theater distribution.

During Operation Desert Shield/Storm (ODS/S), over 40,000 containers and 250,000 463L airlift pallets were shipped to Southwest Asia (SWA) between August 1990 and March 1991, proving again that materiel can be quickly moved. It was also demonstrated, however, that the in-theater link of the distribution system (which is responsible to control and move supplies from the air/seaport of debarkation to the user) was not equipped nor manned to manage the volume of materiel.

This document provides a conceptual framework for the accomplishment of battlefield distribution support for the Force XXI Army. It is based on historical lessons learned and has been adjusted to fit the realities of the current world. It will require additional adjustment. The concept facilitates the type of evolutionary and innovative approach required of not only the leadership in future military operations, but their supporting logisticians as well.

The Battlefield Distribution concept provides continuity of logistics command and encompasses the distribution of materiel, equipment, personnel, and soldier support items through the logistics pipeline. While this concept limits itself to distribution within the theater of operations, it recognizes that all strategic logistics agencies play a vital role in the success of Battlefield Distribution operations.

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Military Operations

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Summary. This pamphlet serves as the basis for developing doctrine, training, leader development, organizations, and materiel changes focused on soldiers (DTLOMS) requirements and solutions for future logistics distribution operations in support of the force projection Army. This concept links the strategic, operational, and tactical levels of logistics, which provide logistical distribution from the source to the user. Battlefield distribution (BD) enables U.S. Forces to properly request, receive, redirect, maintain, distribute, control, and retrograde within a single distribution system. This will maximize throughput and ensure continuous and timely visibility of units, personnel, and unit/sustainment materiel moving within the area of operations. BD will provide the combatant commanders with fully integrated distribution management.

Applicability. This pamphlet applies to all DOD activities which develop DTLOMS requirements and products.

Suggested improvements. The proponent of this pamphlet is the Deputy Chief of Staff for Combat Developments. Send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) through channels to Commander, TRADOC, ATTN: ATCD-BP, Fort Monroe, VA 23651. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal).

Availability. This publication is available on the TRADOC Home page at http://www-tradoc.army.mil

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Chapter 1
Introduction

1-1. Purpose. This pamphlet describes the concept for BD.

a. The concept describes the definition of BD, why BD is needed, and describes the major approaches to achieve effective distribution operations. It also describes the key conceptual characteristics of BD, and establishes the capabilities the Army requires to perform distribution of materiel and services in support of the full range of military operations.

b. The concept also assesses the impact of BD on DTLOMS.

1-2. References. Required publications used in this pamphlet are listed in appendix A.

1-3. Explanation of abbreviations and terms. Abbreviations and special terms used in this pamphlet are explained in the glossary.

Chapter 2
Overview

2-1. Why the concept is needed. As articulated in Field Manual (FM) 100-5, Operations, future military success requires the Army to rapidly project lethal and survivable combat power into any part of the world and sustain forces across a broad range of military operations. Recent operatirons such as Urgent Fury, Just Cause, Desert Shield/Storm, and Restore Hope, have demonstrated the Army's capability to deploy when required. These operations, however, underscored the deficiencies within the current logistics systems. Redundant, multi-layered support systems and structures developed to support the general conflict mold of the Cold War are now inadequate. These outmoded systems create resource demands that can no longer be supported. For this reason, Army logisticians must examine the way we do business. The challenge is to keep those useful practices, and to establish new ways of doing business where needed. The Army must develop a distribution system that is fully capable of supporting the entire range of U.S. force projection operations. The BD concept establishes the framework for Army logisticians to improve upon the current distribution system. BD requires innovative doctrinal approaches, reengineered combat service support (CSS) organizations, highly trained soldiers, and advances in technology and communication systems commensurate with total force improvements. BD development strategies will follow the basic premises outlined below.

a. The focus of this concept is on battlefield distribution operations in a force projection theater. The framework for BD operational capability requirements is based upon a deployed Army corps, with sufficient echelons above corps (EAC) structure, to perform necessary theater strategic and operational logistics functions in support of joint and multinational forces.

b. BD will capitalize upon modular designs, capabilities-based force tailoring, and technology enhancements to support future contingency operations involving U.S. and allied forces. These deployments will range in size from a reinforced battalion in support of a lesser contingency to multiple corps operating under an Army Service Component Commander in support of a major theater war (MTW).

c. BD procedures will build upon the successful practices of Army operational units such as the “Hub and Spoke” distribution system established in Europe. BD will also incorporate technology enhancements and benchmark commercial business practices to the extent practicable. Benchmarking commercial business practices means that the Army will attempt to capture the best of current ideas, management practices, and technology stemming from commercial business for potential use in BD, while recognizing the fact that militarily unique circumstances often preclude total imitation of many of those same successful practices.

d. In order to establish and maintain an effective in-theater BD system, there must be seamless connectivity between the strategic and operational agencies/activities. BD will necessitate a review of strategic systems and their linkages to operational sustainment organizations/activities in theater.

2-2. Assumptions.

a. Threat. BD alone is not intended to defeat a threat; it increases the capability of forces to defeat any threat. BD will operate in all areas of the world throughout the spectrum of contingency missions. Units performing BD operations will be vulnerable to the entire spectrum of threat weaponry (conventional, unconventional, and weapons of mass destruction) and forces. The likelihood of encountering threat capability will vary depending on the level of conflict and the region of the world in which operations occur. The most serious threat to BD is the interruption of the flow of information.

b. Future operations. Future logistics operations will be joint and combined/ multinational in nature and may involve other U.S. government departments and agencies. Future combat operations and military operations other than war (MOOTW) will be conducted with forces varying in size from an enhanced battalion up to one or more conventional corps. In addition, there may be simultaneous operations in different locations around the world. BD is focused on a conventional corps structure and will have the flexibility to support all types of operations including those that involve current forward-deployed forces.

c. The Reserve Component (RC). The Active Component (AC) will rely on both the U. S. Army Reserve (USAR) and the Army National Guard (ARNG) to provide a number of logistical functions in support of combat operations and MOOTW. Given a shrinking force structure and declining defense expenditures, this reliance on RC logistical capabilities will most likely increase in the future. The RC will continue to maintain a significant portion of the Army's logistics force structure and will require concurrent fielding of new equipment and technologies with the AC.

d. Civilians in support of military operations. Department of Defense (DOD) civilian personnel, personnel from non-DOD organizations, civilian contractors, and elements of civilian host nation support organizations will continue to provide an ever-increasing number of capabilities in support of military operations. These civilian personnel may be incorporated into the military command and control structure in an area of operations. Integration and use of these non-uniformed or nontraditional support personnel will have major command and control and logistic support impacts. These impacts will require civilian issues to be addressed during the planning and execution of operations.

e. Technology. Application of technologies to enhance communications and information flow is vital to the concept. The Army will continue to leverage existing and emerging technological capabilities to enhance support operations across the broad range of military operations. Source data automation will be used to the maximum extent possible to eliminate redundant tasks and operations.

f. Army role. The Army will continue to fulfill Title 10 responsibilities and other Wartime Executive Agency Requirements (WEAR), and may also be required to play an increasing role in future land force logistics operations.

2-3. Limitations. Successful long-term implementation of this concept is affected by the following factors:

a. Timely deployment of units, personnel, and equipment to perform BD functions (availability of strategic lift).

b. The fielding of state-of-the-art technologies such as Total Asset Visibility (TAV), Automatic Identification Technology (AIT), Automation Information Systems (AIS), and reliable voice and data communications systems.

Chapter 3
Concept

3-1. General. Rapid force projection from continental United States (CONUS) or forward deployed locations, extended lines of communication, and potential operations in logistically bare-based areas require Army development of a distribution system that is versatile, deployable, and expandable. Army logisticians must create a modular distribution system which weaves the current strategic, operational, and tactical levels of logistics into a seamless continuum. In this manner, the emphasis of Army logistics will shift from echeloned support to projecting and sustaining force capability.

3-2. Considerations for battlefield distribution.

a. BD concept definition and description.

(1) Definition. Defining battlefield distribution as it is applied in this concept is critical. The following definition of BD is the result of combining the definitions of "distribution" and "distribution system" in Joint Publication 1-02 with the conceptual requirements of future battlefield logistics support:

> **BD is a holistic concept of information exchanges, management procedures, functional organizational designs, and reengineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control, and retrograde materiel, services, units, and personnel within a single distribution system.**

(2) Concept description. To achieve effective BD operations, Army CSS personnel will need to examine the processes of materiel management, movement management,

and battlefield customer support operations. These processes will require modification in order to incorporate the characteristics of BD. The heart of BD improvements focuses on technological enhancements that will be provided to the commanders, managers, and operators tasked with distributing materiel, services, and personnel across the future battlefield.

(a) Key fundamentals. The key fundamental requirements of BD are an integrated architecture of management information systems, the merging of materiel and movement management systems, and tailored logistics force packaging. It is of utmost importance that technological enhancements be developed concurrently with organizational improvements. The BD management system will utilize state-of-the-art technologies such as communication enhancements, automatic identification technology, automated source data input, and integrated standard Army information management systems to create a seamless flow of management information from the strategic to tactical levels of logistics. BD will streamline requisition, receipt, movement control, redirection, distribution, redistribution, and retrograde of all classes of supply and equipment for the deployed combat force. The merging of materiel and movement management systems will allow BD managers, in conjunction with the Commander in Chief/Commander, Joint Task Force (CINC/CJTF) staff, to synchronize sustainment materiel flow with reception and onward movement operations to ensure a continuous flow of units, personnel, and materiel through ports of debarkation to the correct destination. Tailored, capabilities-based logistic forces will deploy rapidly to the area of operations and sustain combat forces anywhere in the world.

(b) Linkages. At the strategic level, BD materiel managers will monitor and assess usage factors and operating tempo (OPTEMPO) in the area of operations and project sustainment materiel requirements. The flow of materiel will be coordinated with the senior operational logistician to deliver the right quantity at the right time. Strategic level operators will leverage technology to sustain projected forces while requiring less physical resources in theater. As outlined in the Army Strategic Logistics Plan (ASLP), the strategic sustainment base will perform as the “national provider” for the projected force. Strategic agencies/activities outlined in the ASLP will work closely with the rear sections of split-based Army units to ensure that the sustainment requirements of the projected force are met in the most effective manner possible. BD enhancements will allow operational logisticians to properly size and locate stocks in an area of operations and increase customer demand satisfaction without increasing strategic lift requirements. This is accomplished through a combination of increased velocity of materiel management information from the sustaining base and total visibility of all materiel assets, both in-stock and in-transit. Improved velocity management and properly sized/located authorized stockage lists (ASLs) will replace the requirement for multiple, layered stocks at each level throughout the corps and division units. Operational logisticians bridge the gap between the strategic sustainment base and the customer located at the tactical level. AIT and AIS technology enhancements provide near real-time flow of requisitions, provide BD managers total visibility of all materiel assets from strategic to tactical level, and allow rapid throughput of materiel directly to the requestor (see fig. 3-1).

b. Automation and information. BD must incorporate communications enhancements, automatic identification technology, automated source data input, integrated information management systems, and distribution platforms that are fully integrated and compatible with strategic, operational, and tactical systems.

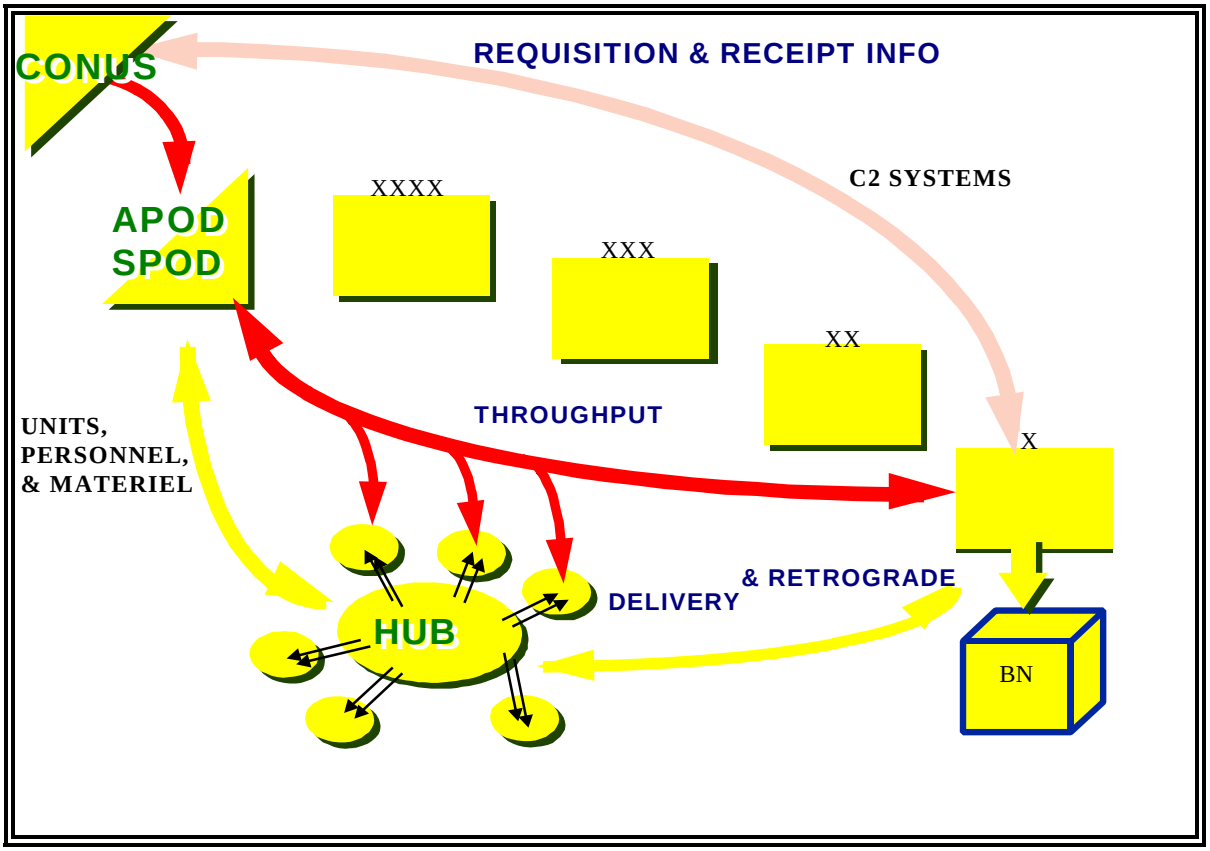

Figure 3-1. Requisition and receipt information.

c. Characteristics of BD.

(1) Merging of materiel and movement management under a single distribution manager at each echelon. Effective distribution operations will require continuous interface between movement and materiel managers. BD also requires a single person to be responsible for distribution management at each echelon. This single manager will supervise the interface between movement control and materiel management, and direct overall logistics support operations. The merging of these management functions will be attained through a combination of automation/communication links and staff supervision from the designated single distribution manager.

(2) Use of a hub and spoke distribution system. Distribution within the area of operations will focus on rapid port clearance through the use of an inland distribution terminal that is connected with any number of supply support activities (SSA) such as the “Hub and Spoke” operation currently used in Europe. The synchronization of this hub and spoke distribution system will be accomplished through the use of mode operators, voice/data communications, and AIS technology enhancements

(3) Tailored, capabilities-based logistics support for varying force projection operations. Logisticians must be capable of rapidly tailoring organizations to perform the full range of force projection operations. BD will rely upon a well-designed “Theater Force Opening

Package" to provide the initial infrastructure to conduct port opening, reception and onward movement, and initial sustainment operations during a force projection operation. Capabilities-based logistics units, capitalizing upon modularity and split basing, will be assembled and deployed rapidly to provide distribution support for the deployed combat force. This tailoring will be applicable in war as well as MOOTW.

(4) Reduction in layering of supplies. The BD system will rapidly identify requirements and fill them at unprecedented levels of customer demand satisfaction. TAV/in-transit visibility (ITV), integration of materiel and movement management, and properly sized ASL will reduce stockage levels throughout an area of operations. The single distribution manager level will require visibility over all stocks and direction/redirection authority to fill demands.

(5) Increased throughput operations. Unitized packing of materiel by strategic supply activities, TAV/ITV, efficient transportation mode operations, and improved visibility of unit locations on the battlefield will increase the instances where shipments received at ports of debarkation can be throughput directly to consignees.

(6) Improved information flow. Technology enhancements and improvements in communications for CSS units will be required to increase the velocity and accuracy of information flow throughout the strategic, operational, and tactical levels of logistics. These enhancements are required in standard Army management information systems (STAMISs), source data automation systems, command and control systems, and voice/data communications.

(7) Near real-time asset visibility. Key to the success of BD are technology enhancements that will provide near real-time asset visibility. Near real-time visibility provides the distribution manager the capability to rapidly locate assets then direct materiel release orders and the necessary transportation to rapidly deliver the item to the requestor.

(8) Theater force opening package. Recent force projection operations have demonstrated that insurmountable backlogs may occur at ports of debarkation if the right units, equipment, and technology to perform port clearance and initial logistics sustainment operations are not deployed early in the flow. BD will require a tailored "Theater Force Opening Package" that is capable of deploying rapidly and establishing the necessary terminal service operations, transportation mode operations, and inland distribution terminal operations to keep materiel moving through the ports. Port opening packages are deployed as part of the tailored Theater Force Opening Package.

(9) Integrated STAMIS. BD requires a single integrated STAMIS to perform materiel management. A joint integrated STAMIS will ultimately allow the Army to more effectively perform executive agent logistic sustainment responsibilities to other U.S. services.

d. Objectives of BD are:

(1) Improved combat capability.

(2) Improved customer confidence.

3-3. Distribution management. Distribution management is the planning and coordinating for the delivery of units, personnel, and materiel to the area of operations, ensuring the delivery of assets to their final destination, and coordinating retrograde operations. BD managers at each level will be linked via an integrated communications network using AIS, AIT, and voice systems. Distribution management functions will be performed from the highest level of logistics command in an area of operations, through each subordinate echelon. The cornerstone of successful BD is the merging of materiel management functions with movement management functions at each level under the auspices of a single distribution manager.

3-4. Flow of materiel and information. The effective flow of materiel and information are vital to the BD concept. Materiel and information systems must function in an uninterrupted continuum from the strategic level down to the combatant user. This section describes the BD requirements for both materiel and information flow at the strategic, operational, and tactical level of logistics.

a. Flow of materiel.

(1) Strategic/operational. Sustainment materiel flows from the strategic sustaining base. Unit equipment flows from the force projection platform (CONUS, Europe, Korea, Alaska, Hawaii, or other areas where forces may be deployed) so as to arrive in the theater of operations by the CINC's required availability date. BD managers and operators at the strategic and operational levels will work together to ensure that logistical sustainment keeps pace with the tempo of the deployment operations. Prior to deployment, key strategic agencies such as U.S. Transportation Command (USTRANSCOM), Defense Logistics Agency (DLA), U.S. Army Materiel Command (AMC), and U.S. Army Medical Materiel Agency (USAMMA) will communicate with operational organizations such as the CINC/CJTF staff, the theater level logistics support command, the Materiel Management Center (MMC), and the Logistics Support Element (LSE) to identify requirements and effect the flow of materiel. During the initial stages of deployment, a tailored Theater Force Opening Packages is deployed to provide initial logistics command and control, operate ports of debarkation, support reception and onward movement operations, and provide initial sustainment for the deployed force. During the sustainment phase, a mature distribution system provides the deployed force with rapid replenishment of materiel, timely relocation of units, and effective retrograde operational support. All modes of transportation will be used in the materiel distribution process to include: rail, barge, inter-theater air, airdrop, host nation assets, and any other available means of delivery within theater. Mature distribution operations are centered around a hub and spoke system. The hub and spoke system is further described in paragraph 3-5 below. Air transportation will continue to serve as the mode of choice for emergency and critical materiel delivery. During the reconstitution and redeployment phase, BD managers will develop and support plans to relocate or redistribute materiel to reconstituting units and redeploy materiel and equipment to strategic storage sites or home station.

(2) Operational/tactical. Both unit and sustainment materiel that flow to an area of operation (AO) will be received and processed based upon instructions from the single distribution management agency/activity. Unit materiel and equipment will be received by the theater distribution system and delivered to owning units as they arrive in theater. The distribution system will be capable of temporary storage of unit materiel and equipment to accommodate operational employment decisions. Sustainment materiel designated as theater stockage will normally bypass intermediate nodes and be delivered directly to designated storage

sites. The automated, interlinked distribution management network is updated as supply accounting information is processed by the receiving storage site. BD provides forward support to employed forces by rapidly moving materiel and services to the combatant, bypassing intermediate nodes to the extent possible. Single consignee materiel will bypass intermediate nodes and be delivered directly to the lowest level customer SSA. Sustainment materiel packaged for multiple customers will be initially handled by a distribution terminal that segregates, reconfigures, documents, and then ships the materiel to the lowest level customer SSA. The elimination of batch requisition processing will provide near real-time flow of requisitions and materiel management information and, combined with increased velocity of materiel to the requester, supplant the requirement for maintaining redundant items on ASL in the Division and non-Division SSAs. Rapid, direct delivery of sustainment materiel will allow the logistician to support the combatant commanders while relieving them of the multiple, layered stockpiles of materiel.

b. Flow of information. BD, as with any effective distribution system, relies heavily on timely and accurate information flow. The interconnectivity of the various information systems within the supporting communications network is critical to BD. Communications must provide reliable connectivity for the seamless flow of information throughout the strategic, operational, and tactical continuum.

(1) The flow of information must be supported by technology improvements in AIT, AIS, and STAMIS. CSS information will enter the theater level distribution management systems through strategic information systems. There may be any number of strategic (including joint) systems located in the theater in support of the CINC. At air, water, and inland terminals, supply activities, transfer points, and other critical nodes within the theater, AIT will be used to retrieve data and update the information management systems. Improved movement tracking systems will connect the vehicle operators with the mode managers at all levels throughout the theater to enhance the capability to expedite, hold, or divert shipments. Management information systems will feed data as required for command capsulation and presentation (see figure 3-2). Management information will be entered into the tactical communications user system and relayed through a gateway (in-theater) back to the sustaining base, providing a seamless flow of information throughout the system.

(2) Information is passed between distribution management agencies/activities at every level throughout the system. Command and control information will be provided to the operators of the BD system through voice data communications and STAMIS interconnectivity. Functional materiel and movement management teams will be located at critical logistical operational points throughout the area of responsibility (AOR) to provide the link to centralized materiel and movement agency/activities.

3-5. Hub and spoke distribution system. The hub and spoke distribution system will be the focal point of BD at the operational level. This system may be modeled on the hub and spoke distribution system developed in Europe and benchmarked, to the extent possible, on industry standards set by commercial business corporations. Hub and spoke is based on a central terminal (hub) that receives, repacks, manifests, stages, and redirects cargo over established routes (spokes) to and between customer units (satellites). A hub and spoke system will be established as part of BD and will provide major enhancements to operational logistics support. The hub and spoke distribution system will be managed by the single distribution management

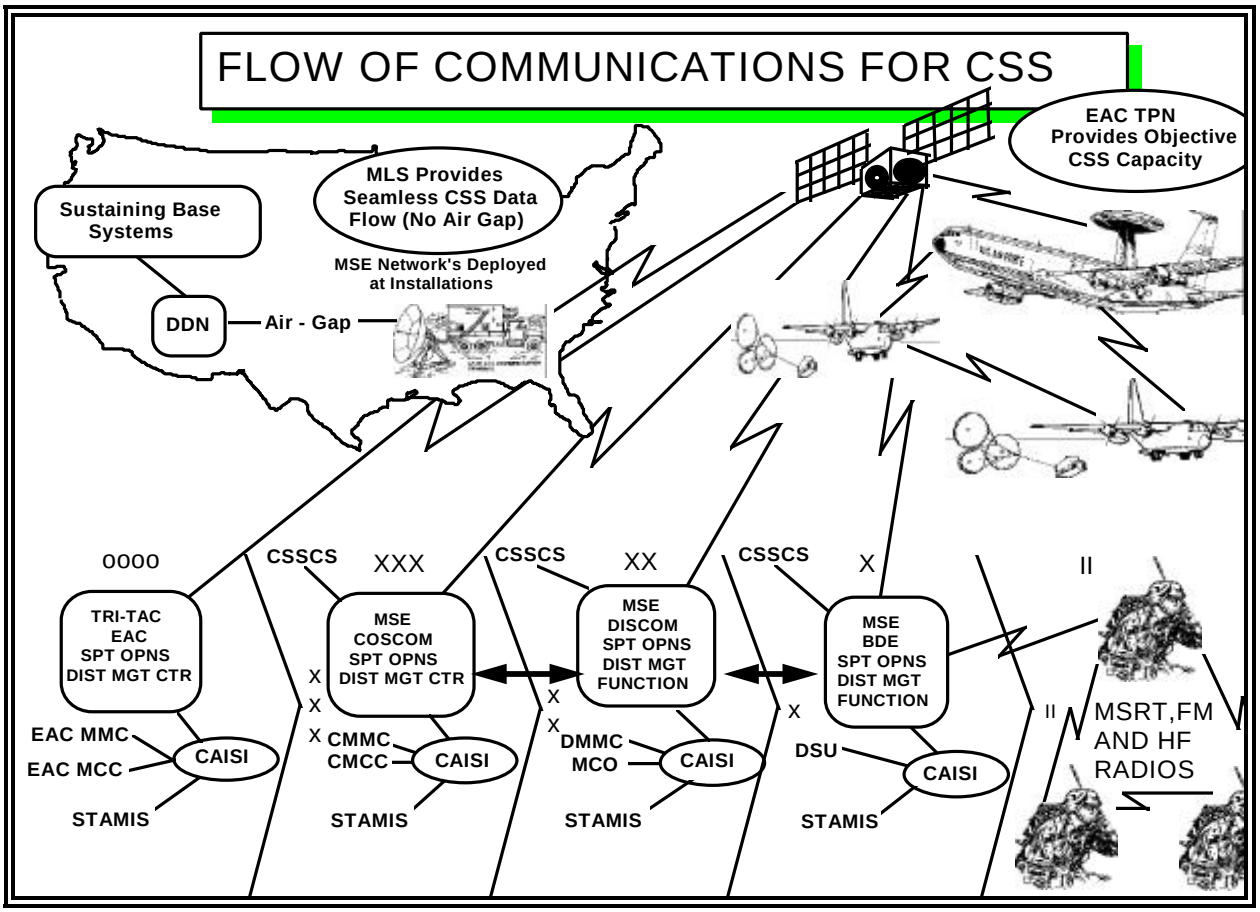

Figure 3-2. Flow of communications for CSS.

agency/activity. The Theater Force Opening Package will include modular organizations to establish this hub and spoke system and perform critical initial logistics support to early deployed forces.

3-6. Force projection. BD operations will encompass the full range of the force projection continuum. BD organizational structure must support the full spectrum of contingencies outlined in the Defense Planning Guidance including deployments in support of two nearly simultaneous major theater wars. BD will support CSS principles and imperatives by focusing on delivering the right materiel to the combatant in a timely manner. During the predeployment phase of a force projection operation, a thorough Logistics Preparation of the Theater (LPT) is required. BD managers and operators will use the LPT to establish the initial theater force opening package and other early flowing organizations required to conduct initial unit reception operations and to distribute materiel and services to the early deploying combat force. During the deployment phase, BD organizations will be deployed in a manner that supports the deployment milestones established in the Army Strategic Mobility Plan (ASMP). During the sustainment phase, BD managers and operators concentrate on the establishment and operation of an effective hub and spoke distribution system. The flow of sustainment materiel becomes the major focus of BD operations during this phase. As the OPTEMPO subsides at the conclusion of operations or in the event of a second regional contingency, emphasis shifts to redeployment from the current area of operations to either return to home station or deploy to another area of operations.

3-7. Future operational capabilities (FOC).

Battlefield Distribution (FOC CS 98-03)

Description: Capability to request, receive, and redirect, maintain, distribute, control, and retrograde logistics within a single distribution system. BD will maximize throughput and redeployment to ensure timely visibility of units, personnel, sustainment materiel, and service moving to, from, and within the AO. Will provide fully integrated distribution management.

3-8. Battlefield distribution elements. The following elements are required to accomplish BD on the Army XXI battlefield.

a. Deployability. BD requires rapidly deployable, capabilities-based organizations that make effective use of strategic lift to both project and sustain the force.

b. Automation and communications:

(1) AIS. An interoperable family of automated information systems will provide the required supply, transportation, and maintenance capabilities for support of land combat forces. The heart of AIS is the STAMIS. STAMISs, fully integrated throughout the strategic, operational, and tactical levels of logistics, are crucial to successful BD operations.

(2) AIT. A family of technologies that support source data automation through various media that facilitates the rapid collection, consolidation, storage, and retrieval of data to and from the STAMISs. BD will incorporate AIT systems and use them together in a complimentary manner. AIT provides a medium for the storage of source data to facilitate rapid and accurate data acquisition, and retention and retrieval to the STAMIS. AIT systems include the technology to provide TAV and ITV to BD managers.

(3) Improved communications. Timely voice and data communications systems are required to provide the interconnectivity between the various BD management, information, and command and control systems.

(4) Strategic systems. AIS must be interfaced at the strategic level. These systems must also be interfaced with operational/tactical systems.

c. Split-based capability. BD requires modular organizational structures that are capable of split-based operations. BD will benchmark the approved Corps Materiel Management Center (CMMC) Split Operations Force Design Initiative in selected organizations that perform command and control and management functions.

d. Modular design. BD requires application of modularity to operational force structure. Modular designs, such as the one used in the CMMC split operations concept, will provide the basis for tailoring logistics force packages to meet a full range of force projection operations.

e. Prepositioning Army reserve stock. BD will rely on prepositioned war reserve materiel to perform theater force opening and initial sustainment operations while minimizing impacts upon strategic lift.

f. Sustainability. BD requires equipment and organizations that are capable of prolonged operations under austere and adverse conditions.

g. Forward support. BD requires information systems and distribution operational procedures that will provide forward support to combatant forces. BD must rapidly move materiel from the national sustainment base to the fighter in a manner that improves combat capability and strengthens customer confidence in the logistics system.

3-9. Relationship to other concepts.

a. Force XXI operations, TRADOC Pamphlet 525-5. BD supports the Force XXI requirement to rapidly project forces throughout the world and meet any level of threat.

b. CSS Battle Dynamic Concept, TRADOC Pamphlet 525-200-6. The CSS Battle Dynamic Concept challenges logisticians to establish new ways of doing business where needed. It challenges Army logisticians to create a system in which the realities of force projection necessitate the weaving of the current strategic, operational, and tactical levels of logistics into a seamless continuum. BD meets these challenges by providing a system which fully integrates distribution management.

c. Concept for modularity, TRADOC Pamphlet 525-68. BD reinforces the Modularity concept by providing for the logical insertion of units into the theater. MMCs will be modularized to facilitate split-based operations.

d. Vision of combined arms support. This Combined Arms Support Command (CASCOM) Vision provides logistics combat developers the conceptual framework of future logistics support during U.S. force projection operations. BD supports the major characteristics of envisioned future logistics operations by providing the framework for the melding of strategic, operational, and tactical logistics into a seamless continuum.

e. Split-based operations. One of the aims of BD is to achieve a fully integrated (materiel and movement) distribution system. Split-based operations allows routine management functions to be accomplished in CONUS or outside the continental United States (OCONUS) while critical wartime functions can be projected forward early in an operation. The split-based operations capability also allows for modular growth and tailoring of the logistics elements deployed in support of the force that is being projected. Split-based operations will support BD by providing the modular materiel management cells to be integrated with movement functions and projected forward throughout the battlefield.

f. Army centralized distribution system (ACDS). ACDS and its principles were incorporated into the BD concept. The ACDS concept collocated the echelons above corps (EAC) Movement Control Agency and Materiel Management activities, and established a central receiving and shipping point (CRSP) for containers that required transshipment.

g. Contingency contracting. Contingency contracting bridges gaps that may occur before sufficient organic support units arrive, or before Logistics Civilian Augmentation Program (LOGCAP) resources arrive in the AO. It is an effective force multiplier of CSS in the initial phases of supporting an operation.

h. TAV and ITV. The TAV concept was written by the Strategic Logistics Agency and consists of two subordinate parts, asset visibility and in-transit visibility. Asset visibility covers resources in inventory, or static to the visibility system, and in-transit visibility which, as the name implies, covers resources in motion throughout
the strategic, operational, and tactical continuum. The TAV concept is being translated into a computer software system which can track resources throughout the world. This software will support the BD requirement to be able to identify, cross level, ship, or redirect assets to provide immediate support to the combatant.

i. Integrated Sustainment Maintenance (ISM), TRADOC Pamphlet 525-81. ISM is a supporting, if not parallel, system linked to BD, working to increase the use/availability of assets in the supply system, and limit or reduce procurement as a first source of supply. The ISM initiative focuses on centralized management and workloading of all sustainment maintenance activities under a single manager.

j. Global Combat Support System - Army (GCSS-A). GCSS-A is a CASCOM initiative that addresses STAMIS integration, a critical piece of BD. Logistics, finance, personnel, and medical STAMISs must all interface to operate seamlessly with each other and the strategic systems supporting them.

k. Defense Finance Battlefield System (DFBS). DFBS is a supporting system to BD which will satisfy Congressional oversight needs by providing rapid retrieval of logistics financial related data.

l. Total distribution program (TDP). TDP is a CASCOM/Logistics Integration Agency program that was initiated based upon lessons learned from Operation Desert Shield/Storm. TDP outlined the total process and functions associated with Army force projection distribution operations. One hundred forty total issues were defined during the TDP study phase. These issues have been worked over the past two years and BD, once introduced as a concept, became a venue for addressing doctrinal and organizational distribution issues. BD will provide high payoff resolution to TDP issues through synergistic employment of materiel, organizational, and doctrinal improvements in distribution operations.

m. Army Strategic Mobility Plan (ASMP). The ASMP establishes time phased strategic deployment objectives to support force projection operations. ASMP deployment milestones provide the correct mix of warfighters and supporters throughout the deployment continuum. BD was developed to support ASMP. BD initiatives such as the Theater Force Opening Package and tailorable, modular organizational CSS structure will be designed to meet deployment timelines established by the ASMP.

n. Army Strategic Logistics Plan (ASLP). The ASLP is the management plan to focus logistics initiatives with the Chief of Staff, Army vision for America’s Army: a trained and ready force, capable of decisive victory which serves the nation at home and abroad. ASLP requires the future Army logistics system to weave strategic, operational, and tactical levels into a seamless continuum while losing the constraints of current organizational boundaries. BD supports the ASLP by establishing the requirements for linkages between the many functional proponents and individual commands and agencies which make up the Army’s complex logistics system.

Chapter 4
Implications

4-1. Doctrine.

a. A significant doctrinal void currently exists in the discussion of distribution operations. As an emerging concept, BD will impact virtually all levels of logistics doctrine. A BD Special Text or an interim doctrinal publication will be required to proliferate the new doctrine until current doctrinal manuals can be changed. At the capstone level a BD chapter will be added to the following manuals:

(1) FM 100-10, Combat Service Support.

(2) FM 100-16, Army Operational Support.

b. The following manuals will also require changes in varying forms:

(1) FM 1-500, Army Aviation Maintenance.

(2) FM 8-10, Health Service Support in a Theater of Operations.

(3) FM 8-10-9, Combat Health Logistics in a Theater of Operations.

(4) FM 8-15, Medical Support in Divisions, Separate Brigades, and the Armored Cavalry Regiment.

(5) FM 9-6, Munitions Support in a Theater of Operations.

(6) FM 10-1, Quartermaster Principles.

(7) FM 10-23, Basic Doctrine for Army Field Feeding and Class I Operations Management.

(8) FM 10-27, General Supply in a Theater of Operations.

(9) FM 10-52, Water Supply in theaters of Operations.

(10) FM 10-67, Petroleum Supply in Theaters of Operations.

(11) FM 11-30, MSE Communications in the Corps/Division.

(12) FM 12-6, Personnel Doctrine.

(13) FM 19-1, Military Police Support for the AirLand Battle.

(14) FM 19-4, Military Police Battlefield Circulation Control, Area Security, and Enemy Prisoner of War Operations.

(15) FM 29-19, Repair Parts Supply for a Theater of Operations.

(16) FM 54-30, Corps Support Groups.

(17) FM 54-40, Area Support Groups.

(18) FM 55-1, Transportation Operations.

(19) FM 55-2, Division Transportation Operations.

(20) FM 55-10, Movement Control in a Theater of Operations.

(21) FM 55-65, Strategic Deployment.

(22) FM 63-1, Support Battalions and Squadrons, Separate Brigade, and Armored Cavalry Regiment.

(23) FM 63-2, Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions.

(24) FM 63-2-1, Division Support Command, Light Infantry, Airborne, and Air Assault Divisions.

(25) FM 63-3, Corps Support Command.

(26) FM 63-4, Theater Army Area Command.

(27) FM 63-20, Forward Support Battalion.

(28) FM 63-21, Main Support Battalion.

(29) FM 71-100, Division Operations.

(30) FM 100-5, Operations.

(31) FM 100-7, Decisive Force: The Army in Theater Operations.

(32) FM 100-11, Force Integration.

(33) FM 100-15, Corps Operations.

(34) FM 100-17, Mobilization, Deployment, Redeployment, Demobilization.

(35) FM 100-19, Domestic Support Operations.

(36) FM 100-20, Military Operations in Low Intensity Conflict.

(37) FM 100-23, Peace Operations.

(38) FM 100-22, Installation Management.

(39) FM 100-25, Doctrine for Army Special Operations Forces.

(40) FM 101-10-1/2, Staff Officers Field Manual - Organizational, Technical, and Logistical Data Planning Factors.

(41) FM 700-80, Logistics.

c. Additionally, all TRADOC and Army proponents must review and update doctrinal publications as they pertain to this concept.

4-2. Training. The BD concept will be integrated into all aspects of the Army enlisted, officer, and civilian institutional, mission, and unit training. Training includes programs of instruction (POI), Logistics Programs, Practical Exercises, Military Training Programs, and embedded training. There may be moderate impact on institutional training for enlisted and officer personnel. Examples of training that may require modification are: basic and advanced NCO courses, Officer and Warrant Officer Basic Courses, Officer and Warrant Officer Advanced Courses, Combined Logistics Officer's Advanced Course, Logistics Executive Development Course, and Command and General Staff College. Additionally, the pre-command course will require updating. Simulations, simulators, exercises, and war games must be designed to replicate the operations and organizations described in this concept to include training to support joint, combined, multinational/coalition, and interdepartmental operations during deployment/employment/ redeployment for normal military operations and MOOTW. Unit training should emphasize the requirement to perform core missions while interfacing with other BD organizations to establish and maintain an integrated distribution network.

4-3. Leader development. Commanders and leaders must understand the implementation, operations, relationships, and goals and objectives for the use of this concept. Leaders must have a working knowledge of the distribution systems architecture and capabilities. Formal leader development within the different training and education programs throughout the Army must include a pertinent, meaningful infusion of BD.

4-4. Organization. The current structure of the following units will be examined to determine the impacts of BD upon their mission, organization, equipment, personnel, and doctrinal command/control relationships.

TAACOM MMC	CMMC	MSB
TAMCA	CMCC	FSB
TMMC/MLMC	HQ & SP TRPS, COSCOM	ASB
HQ, & SP TRPS, TAACOM	HHC/MMC, DISCOM	CSG/ASG

BD organizations will require technology enhancements and some modifications to adhere to the characteristics of BD operations. No permanent changes to organizational structure or doctrine will occur until BD is properly tested, demonstrated, and analyzed. The results of Army warfighting experiments (AWEs), technology demonstrations, experimental force (EXFOR) evaluation, and combat developer analysis will be fully considered prior to making large scale force structure changes.

a. Equipment. Highly technical equipment will be needed forward during most operations. Equipment will have to be added to table of organization and equipment (TO&E), obtained through common table of allowances (CTA), or obtained through contract leasing and Army Reserve stocks.

b. Personnel. BD will require minor modifications in personnel composition of current TOEs. It may affect grade structure and density to meet requirements for distribution management integration and technical expertise. It is not anticipated that BD organizational modifications will result in significant additions or deletions in force structure. The overall personnel goal is "zero sum gain."

c. Automation and communications. Automation systems are vital to the success of BD. Documentation of both hardware and software will have to be reviewed. Force projection operations may also require smaller, more portable automation capability. Communications enhancements are also vital to the success of BD. Operational facility (OPFAC) rules governing communications equipment allocations will need to be reviewed/revised to ensure increments/ elements receive communications equipment necessary to accomplish the mission.

4-5. Materiel. This concept will require new and additional automation equipment, enhanced communication systems, and integrated STAMISs. Automation and communication are inextricably linked. Distributed communications networks and enhanced command, control, communications, and automation will increase the ability for dispersed operation over greater distances. The Army must continue to exploit technological opportunities to design, acquire, and field more capable support systems to achieve higher productivity in logistics operations. BD materiel initiatives will capitalize upon nondevelopmental item (NDI) technology and commercial off-the-shelf (COTS) products to prevent unnecessary delays in the procurement and fielding process. Technological enablers including those acquired through NDI, COTS, and standard Army research, development, and acquisition must be clearly documented for each type of BD organizational TOE.

4-6. Soldiers. This concept does not require additional military occupational specialty (MOSs) or changes to existing MOSs. Soldier support remains unchanged. The battlefield distribution system will have a positive effect on soldiers both individually and collectively as follows: (1) Improved response times will provide the soldier with the information and materiel needed to perform a mission at the right place, time, and in the right quantity, (2) Source data automation will eliminate redundant paperwork and operations, thereby reducing soldier man-hours.

Appendix A
References

Required Publications

DODD 4410.6.
Uniform Materiel Movement an Issue Priority System

DOD Regulation 4500.32-R, Vol I.
Military Standard Transportation and Movement Procedures (MILSTAMP)

Joint Publication 4.01-3.
Joint Tactics, Techniques, and Procedures for Movement Control

DA Pam 700-50	Integrated Logistics Support Developmental supportability Test and Evaluation Guide.
DA Pam 710-2-1	Using Unit Supply System (Manual Procedures)
AR 500-10	Non-industrial Facilities for Mobilization
AR 725-50	Requisitioning, Receipt, and Issue System
ARTEP 63-005-MTP	Mission Training Plan for Battalion Headquarters, Forward Support Battalion, Heavy Motorized Divisions
ARTEP 63-006-30-MTP	Mission Training Plan for Headquarters Detachment, Forward Support Battalion and Main Support Battalion, Heavy and Motorized Divisions
ARTEP 42-004-30-MTP	Mission Training Plan for Supply Company, Forward Support Battalion, Armored and Mechanized Divisions
ARTEP 43-009-30-MTP	Mission Training Plan for Ordnance (Maintenance) Company Forward Support Battalion, Heavy Division
ARTEP 63-125-MTP	Mission Training Plan for Battalion Headquarters Main Support Battalion, Heavy and Motorized Divisions
ARTEP 8-057-30-MTP	Mission Training Plan for Medical Company Main Support Battalion, Heavy Division
ARTEP 9-008-30-MTP	Mission Training Plan for Ordnance Missile Support Company, Main Support Battalion, Heavy Division
ARTEP 42-007-30-MTP	Mission Training Plan for Supply and Service Company, Main Support Battalion, Heavy Division
ARTEP 43-007-30-MTP	Mission Training Plan for Light Ordnance (Maintenance) Company, Main Support Battalion, Heavy Division
ARTEP 43-008-30-MTP	Mission Training Plan for Heavy Ordnance (Maintenance) Company, Main Support Battalion, Heavy Division
ARTEP 55-188-30-MTP	Mission Training Plan for Transportation Motor Transport Company, Main Support Battalion, Heavy Division
ARTEP 63-002-MTP	Mission Training Plan for Headquarters and Materiel Management Center, Support Command, Heavy, Airborne, Air Assault and Light Infantry Division

ARTEP 63-002-30-MTP	Mission Training Plan for Headquarters Company Division Support Command, Heavy Airborne, Air Assault and Light Infantry Division
ARTEP 1-933-30-MTP	Mission Training Plan for Aviation Intermediate Maintenance Company, Division Support Command

Field Manuals (FM)

FM 1-100	Army Aviation Operations
FM 5-36	Route Reconnaissance and Classification
FM 55-1	Transportation Operations
FM 55-2	Division Transportation Operations
FM 55-10	Movement Control in a Theater of Operations
FM 55-12	Movement of Units in Air Force Aircraft.(AFM 76-6/FM 4-6/ OPNAVINST 4630.27A)
FM 55-30	Army Motor Transport Units and Operations
FM 55-65	Strategic Deployment
FM 63-1	Support Battalions and Squadrons, Separate Brigades, and Armored Cavalry Regiments
FM 63-2	Division Support Command, Armored, Infantry, and Mechanized Infantry Divisions
FM 63-3	Corps Support Command
FM 63-4	Combat Service Support Operations - Theater Area Command
FM 100-5	Operations
TM 38-725	Direct Support Supply (DSS) and Air Lines of Communication (ALOC) Management Procedures

TRADOC Pamphlets

525-5	Force XXI Operations
525-48	U.S. Army Operational Concept for Logistics Support in a

	Nuclear, Biological and Chemical (NBC) Environment
525-68	Concept for Modularity
525-71	Requirements Determination
525-200-6	Combat Service Support, U.S. Army Battle Dynamic Concept

Army Strategic Logistics Plan (ASLP).

Total Distribution Action Plan (TDAP)

GLOSSARY
Section 1

Abbreviations.

AC	Active Component
ACDS	Army centralized distribution system
AFM	Air Force Manual
AIT	Automatic Identification Technology
AIS	Automation Information Systems
ALOC	air lines of communication
AMC	United States Army Materiel Command
AMS	Automated Manifest System
AO	area of operation
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	Aerial Port of Embarkation
AR	Army regulation
ARNG	Army National Guard
ASB	Aviation Support Battalion
ASG	area support group
ASL	authorized stockage list
ASLP	Army Strategic Logistics Plan
ASMP	Army Strategic Mobility Plan
AWES	army warfighting experiments
BD	battlefield distribution
CASCOM	Combined Arms Support Command
CAISI	CSS Automated Information System Interface
CINC	Commander in Chief
CJTF	Commander Joint Task Force
CMCC	Corps Movement Control Center
CMMC	Corps Materiel Management Center
COTS	commercial off-the-shelf
CONUS	continental United States
COSCOM	corps support command
CRSP	Central Receiving and Shipping Point

CSB	Corps Support Battalion
CSG	Corps Support Group
CSS	combat service support
CSSCS	Combat Service Support Control System
CTA	common table of allowances
DDN	Defense Data Network
DFBS	defense finance battlefield system
DISCOM	Division Support Command
DLA	Defense Logistics Agency
DOD	Department of Defense
DSU	direct support unit
DTLOMS	doctrine, training, leader development, organizations, materiel, and soldiers
EAC	echelon above corps
EXFOR	experimental force
FM	field manual
FSB	Forward Support Battalion
GCSS-A	Global Combat Support System - Army
HHC	headquarters and headquarters company
ICS3	Integrated Combat Service Support System
ISM	Integrated Sustainment Maintenance
ITV	in-transit visibility
LOGCAP	logistics civilian augmentation program
LOGMARS	Logistics Marking and Reading System
LPT	logistics preparation of the theater
LSE	Logistics Support Element
MIS	management information system
MLMC	Medical Logistics Management Center
MLS	Multiple Level Security
MMC	Materiel Management Center
MOOTW	military operations other than war
MOS	military occupational specialty
MSB	Main Support Battalion
MSE	mobile subscriber equipment
MST	maintenance support team
MTW	major theater war
NDI	nondevelopmental item
ODS/S	Operation Desert Shield/Storm
OPFAC	operational facility
OPTEMPO	operating tempo
POD	port of debarkation
POE	port of embarkation
RC	Reserve Component
RF	radio frequency
RFID	radio frequency identification
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SSA	supply support activity
STAMIS	standard Army management information systems
SWA	Southwest Asia

TAACOM	Theater Army Area Command
TAMCA	Theater Amy Movement Control Agency
TAV	Total Asset Visibility
TCN	Transportation Control Number
TD	total distribution
TMMC	Theater Materiel Management Center
TOE	table of organization and equipment
TPFDL	time phased force deployment list
TPN	Tactical Packet Network
TRADOC	United States Army Training and Doctrine Command
USAMMA	United States Army Medical Materiel Agency
USAR	United States Army Reserve
USTRANSCOM	United States Transportation Command
WEAR	Wartime Executive Agency Requirement
WPS	Worldwide Port System

Section II
TERMS.

Battlefield distribution (BD)
The holistic system of information exchanges, management procedures, functional designs, and reengineered operational processes which enable U.S. forces to properly request, receive, redirect, track, distribute, control, and retrograde materiel, services, units, and personnel within a single distribution system.

Hub and spoke distribution system
A distribution method utilizing a distribution terminal (hub) which receives shipments from outlying activities and reconfigures/redirects these shipments over designated routes (spokes) to specified supply activities (satellites). The BD hub and spoke system will be modeled on the hub and spoke system in Europe and will benchmark commercial business practices to the extent possible.

Source data automation
Automatic Identification Technologies designed to help the logistician answer "What's in the box and where is it?" type questions. A combination of source data automation and other AIT will be used in order to achieve the overarching battlefield distribution objectives. Source data is documented at the vendor, depot, or CCP on laser/memory cards, LOGMARS, or similar devices to assist operators and managers along the pipeline with TAV and ITV.

Title 10 and other Wartime Executive Agency Requirements (WEAR)
Title 10, United States Code (USC). Title 10, United States Code (USC) requirements are U.S. law. The functions of the military departments, under the respective Service Secretaries, are subject to the provisions of Title 10 USC and spelled out in DOD Directive 5100.1. The common Title 10 functions include the requirement for the respective military services to:

(a) Prepare forces and establish reserves of manpower, equipment, and supplies.

(b) Maintain readiness in mobile reserve forces.

(c) Provide adequate, timely, and reliable intelligence and counterintelligence.

(d) Recruit, organize, train, and equip interoperable forces for assignment to combatant commands.

(e) Prepare and submit programs and budgets for their respective departments.

(f) Conduct research, develop tactics, techniques, and organization, and develop and procure weapons, equipment, and supplies.

(g) Develop, garrison, supply, equip, and maintain bases and installations.

(h) Provide, as directed, forces for military missions in foreign countries as required.

(i) Assist in training and equipping the military forces of foreign nations.

(j) Provide, as directed, administrative and logistic support to combatant commands.

(k) Assist other services in the accomplishment of their respective missions.

(l) Prepare and submit mobilization information to JCS.

Wartime Executive Agency Requirements (WEAR)
WEAR normally refers to agreements, directives, and procedures, not necessarily prescribed for by law, that identify specific service requirements; for example, the Army's requirement to provide common user land transportation for the respective services during sustained operations.

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